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ABSTRACT

This document is the written component of the final report of the SUNY-Oswego portion of a national education project concerned with the improvement of instruction and the evaluation of college teachers. A videotape on faculty evaluation is also considered by the author to be an integral part of the total report. The written report is divided into five main sections: (1) a statistical examination of the results obtained from a teacher rating scale designed and implemented by the report's author; (2) a chronicle of the expansion of Oswego's faculty evaluation procedures, particularly within the psychology department; (3) discussion of a theoretical orientation scale as it applies to teaching; (4) suggested techniques to improve teaching performance; and (5) a brief treatment of the accompanying videotape presentation. The majority of the document is given over to tables, statistics, and graphs. (LH)

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Final Written Report

NATIONAL PROJECT III

Elevating the Importance of Instruction

David J. King

August 1, 1977

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FINAL REPORT

The following is the final written report of the SUNY-Oswego portion of National Project III: Elevating the Importance of Instruction. The report will be divided into local activity and activity in conjunction with other Fund Associates. A video-tape on faculty evaluation at Oswego (see below) is also an integral part of the total final report.

A. Local Acitivty

1. Statistical Examination of the Results Obtained on the Teacher Rating Scale.

We have now gathered a large amount of data on our Teacher Rating Scale (TRS). The original scale is presented in Table 1. The efforts of Drs. Roger Garthwaite and Mark Morey, Miss Michele Zimowski, and Mr. Jeff Putnam (Research Assistant on National Project III) are primarily responsible for the data presented below. Data were available for 414 psychology classes (student N = 11, 716). A 414 class by 28 item matrix was generated and factor analyzed. The final result of this procedure was a three factor solution which accounted for nearly 88% of the variance. Table 1 presents the varimax factor leadings by TRS item number. The three factors were identified as Teacher-Student Interaction, Lecture Presentation, and Workload or Difficulty. Table 2 also presents specific items for each of the three factors and their factor leadings. Identification of these three factors is highly consistent with the reviews of factor analytic studies (i.e., see Table 1 in Kulik and McKeachie, 1975).

Normative material has been devised for course groups such as the Introductory Psychology Course (separate norms for faculty and teaching assistants), Required Courses, Service Courses, Elective Courses, Graduate Courses, and an overall Total set of norms. These item by item norms are presented in Tables 2 through 9. It is important to note that the item means listed in Tables 3 through 9 are means of classes, not individuals. Consequently, the standard deviations listed are better interpreted as standard errors of the mean. For those interested in such comparisons, the course groups can be compared on factorial structure by a joint examination of Table 2 with Tables 3 through 9. Some of the required, service, elective, etc. courses are given with enough frequency that individual norms for specific courses might be of value. Tables 10 through 12 present such normative data for 13 specific courses.

To my knowledge, this is the most complete set of normative data available for specific disciplinary courses. This completes the work on the normative data here at Oswego. Many other analyses are possible but most of them may be derived from the basic data presented in Tables 2 through 12.

2. Expansion of Faculty Evaluation Procedures.

The original proposal suggested that we would attempt to expand our evaluative system to other departments within Oswego and to other Psychology Departments within the SUNY system. These two efforts are reported below.

a. Oswego - In our original proposal, a system of weighted promotion and retention criteria were explained in detail. Briefly, the system consists of a semi-contractual relationship between a faculty member and his or her chairperson. An example of a blank contract is presented in Table 13. As can be seen, the scheme lists the criteria (taken from the Board of Trustees) for promotion and retention and places a minimal required percentage of evaluative weight. In this case, minimal percentages were given to "Effectiveness in teaching" (55%) and 'Scholarly ability" (25%). The optional or remaining 20% was free to be distributed by the faculty member as he or she wished. There seemed to be several advantages to this system. First, the priorities of the chairperson are made apparent to the faculty member. Second, there is still flexibility present for the faculty member to assign some of the weights and hence, at least in theory, maximize his chances of success (playing to his/her strengths). Another aspect of the semi-contractual system is shown in the lower half of Table 13. Here, each of the criteria that are to be used for evaluation must be specified. With the exception that some form of student input must be present, no particular set of data were required by either the faculty member or the chairperson. They had to work together until they could agree how each criterion should be measured. In practice, nearly all faculty requested that the TRS be used as one indicator of effectiveness in teaching.

In the second year of local work, a major effort was made to develop some form of systematic evaluation at Oswego. To do this, I interviewed as many of the departments involved as wished to participate (32 out of 34 did so wish). The interviews were long and complex ranging from one hour to two hours and twenty minutes in length. Student representatives were present in eight of the interviews. The interviews covered all aspects of faculty evaluation (teaching, research, and service) and centered around whatever method of evaluation they had been using and how they would like to see evaluation improved. Following this, a lengthy report was issued to the faculty and the administration containing recommendations. The recommendations were framed in terms of a number of alternatives. Those interested in a complete copy of the recommendations should write to me. For purposes of this report, I will focus on the recommendations related to the specification of weighted criteria and the recommendation related to evaluation of instruction.

For purposes of weighting of criteria, I recommended a course of action that fell between those wishing a very strong and clear set of administrative regulations (primarily younger, untenured faculty) and those preferring all priorities to be determined by individuals themselves (primarily older, tenured faculty). In short, I recommended guidelines but not a straightjacket. After a number of meetings with administrators, a minimal weighting system was devised and is illustrated in Table 14. This system of weighted priorities is more complex than illustrated in Table 13, and rightly so as they apply across the

institution rather than to just one department. For present purposes, there will be no discussion of how the "Performance Level" is to be determined. It should be noted that this system retains flexibility whereby the individual faculty member may allocate 25% of the weight.

For instructional evaluation, I recommended a double based system of evaluation. One base would consist of student information regarding evaluation of instruction (primarily gathered by the use of teacher rating scales) and the other peer review.

In the area of teacher rating scales, I recommended that, at least at the start, evaluation of instruction be done primarily at a departmental level. There would be a few highly general questions that would be used by all departments in the TRS but most of the items would be generated by each department and would focus on diagnostic problems with an aim to improvement of instruction. The diagnostic information was seen as formative in nature while the general overall items ("Rate the course in general") were viewed as summative.

The peer review process recommended is one taken nearly directly from a Criteria report (No. 6).

As of the writing of this report, the recommendations are being discussed by a number of groups (departmental chairs, Personnel Policies Council, etc.). This summer initial testing of the global summative items will be done for statistical purposes. I am optimistic that the faculty will reach agreement with the administration on an overall evaluation scheme. My role has been as a mediator between faculty and administration

after publication of my recommendations. While not a direct part of National Project III, I might report that the Spring of 1977 was occupied, in part, with administrative evaluation. Interviews were conducted with all "management confidential employess" (27 top administrators) and a report prepared for their consideration. Adoption of an administrative evaluation scheme, while of value in its own right, should help increase the credibility of the administration in their interest in faculty evaluation.

b. Beyond Oswego - Another purpose of my work on National Project III was to attempt to expand the evaluation system developed by the Psychology Department at Oswego to other Psychology Departments within the SUNY system. The method used to expand this activity was to visit as many of the departments as possible, make a presentation regarding the Oswego activity and invite participation. The results of this has been mixed and, if pushed to a summative judgment, probably not worth the time and expense. Several factors contributed to this judgment. A number of the institutions now have mandatory cross-campus systems of student evaluation of instruction. Clearly, under these circumstances, it would be unreasonable to expect the Psychology Departments to add still another system. In those departments visited that fall in this category (3), I was able to make a number of suggestions regarding the analysis of the data. Another factor that must have influenced the willingness of a number of departments to participate was collective bargaining. Over a considerable period of my work, the union

and the state were in bargaining over a contract. Both sides had placed items concerning evaluation on the table. The union had explicitly suggested that any discussion of evaluation before the completion of the contract might not be in the best interest of the faculty. While, of course, I would not agree with this, I suspect it did have an inhibitory influence on participation.

While the above two factors certainly played a role in my lack of success in spreading our evaluative system over a large number of Psychology Departments, a more fundamental consideration emerged in the second year of the grant. During the first year (where I was roughly 50% successful) I had primarily relied on SUNY units that were (1) as close to Oswego as possible and (2) units where I personally knew the chairperson or others on the faculty. The second year I was working with more distant institutions and in most cases, with colleagues that I did not know. It was most difficult to even get invited to these institutions. Distance and the lack of personal friends seemed to be too much of a handicap to overcome the "fear" of evaluation. A number of additional trips were also taken to departments previously visited (some at their request and some on my own) during the second year to further aid them in the development of their evaluation system.

3. Theoretical Orientation Scale and Teaching.

The Theoretical Orientation Scale (TOS) is presented in Table 15. As can be seen, the TOS consists of a number of statements about psychology on which people can agree or dis-

agree (on a 5-point scale). The 63 questions tap 8 factors (determined by factor analysis). There are five bi-polar factors (theoretical-factual, will-strict causality, experiential-behavior content, holism-elementarism, and qualitative-quantitative) and three mono-polar factors (biological determinism, environmental determinism, and physicalism). These eight factors are presented in Table 16 along with a magnitude scale of responses (magnitude can vary from 8 to 40). My initial interest in this scale related to a finding of a relationship between TRS scores and scores on the TOS. Specifically, the correlation between student ratings of instruction and the environmental determinism score of the faculty was + .518. The overall multiple correlation between TOS and TRS, after shrinkage was .649. Several additional studies, one done at Oswego and one with the assistance of members of the Psychology Department at Kansas State University, revealed negative (insignificant) results. While these results were not in keeping with our original findings, other questions seemed of equal or greater interest. We became concerned with when and how students internalized these theoretical orientations? What was the influence of a faculty member's theoretical orientation on that of his students? Was there any relationship between students and professors theoretical orientation and, in turn, the extent to which the closeness of theoretical relationship related to either amount learned or affective reaction to the instructor?

A number of previous investigations have suggested the possibility that various "matches" between students and professors might enhance learning. Domino (1968, 1971), for example, has shown that congruence between professorial classroom style (emphasis on independence vs. emphasis on conformity) and student preferences on the same dimensions has generally resulted in greater amounts of learning under the congruent conditions. Majasan (1972) in a study closer to the present work measured both students and faculty on a scale of degree of favorableness toward "behavioristic" or "humanistic" options in psychology. He hypothesized that professors communicate better with those students whose beliefs concur with his. He found positive support for his hypothesis in 11 out of the 12 classes studied. The present theoretical orientation survey would seem well suited to examining this question in greater detail.

To explore such questions, data were collected on 27 classes over three semesters. Classes were sampled from the Freshman through the Senior level (seven classes at the 100 level, five classes from the 200 level, ten classes from the 300 level, and five classes from the 400 level). In all cases, the TOS was administered to the students in the class during the last week of classes. Data were also available on the TOS scores of the instructors. Sample size over these 27 classes varied (the actual sample size is presented in Table 19) but was only considered seriously small for some of the 400 level courses.

Perhaps the most basic of questions concerned the reliability with which students were able to answer the TOS. Tables 17 and 18 present the details of the reliability figures (split-half, Spearman-Brown corrected) for each of the eight theoretical dimensions. Table 17 presents the reliability figures for each of the 27 classes. Table 19 presents averaged reliability figures as a function of class level (100 through 400). Perhaps the overriding impression of Table 17 is one of variability. This variability is somewhat decreased by grouping as seen in Table 18. In general, there is a modest increase in reliability as one examines course level (100 through 400) and from the start to the end of a course. While increased consistency is true for both within and between courses, the increase is neither dramatic nor at a final level. A final level of consistency can be illustrated by examining the reliability figures for graduate students and faculty members. In the same order as presented in Tables 17 and 18, the reliabilities of the eight factors were .96, .96, .84, .87, .78, .88, and .83, for graduate students. For faculty members, again in the same order, the reliabilities were .87, .91, .89, .81, .66, .93, .83, and .88. Thus, even though students taking senior level (400) courses in psychology exhibit a reasonable degree of consistency of responses over the eight dimensions, they are, in general, not at all as consistent as graduate students in psychology or faculty members.

A second general question concerns the effect of the courses on the theoretical orientation of students. To examine this, a number of analyses of variance were computed. The analyses were done on the assumption that the eight dimensions (having been derived from factor analysis) could be considered independent of one another. Twenty-seven 8 x 2 analyses (eight theoretical factors by a pre-post design with repeated measures for the responses made at the start and the end of the course) were computed. These analyses of variance and the means are presented in Table 19. The overwhelming significance rests on the influence of the theoretical orientation. Except for Industrial Psychology and Theories of Learning (two courses with small Ns), every analysis was significant at the .001 level for the mean effect of theoretical dimensions on a differential basis. Of far less significance was the influence of the course (the pre-post course effect) and the interaction between pre-post effect and theoretical dimension. Specifically, there were nine significant interaction effects (although six of these only reached the .05 level of significance) and five significant pre-post effects (again, two were at the .05 level). Two of the pre-post effects were at the .001 level of significance and were for the Introductory course. Both courses showed a significant increase in elementarism (as opposed to holism) and quantitative (as contrasted to qualitative) orientations. While consistent and strong, these effects were not found in the other five introductory sections. There were two

significant interaction effects at the .001 level, both found in courses in Child Psychology. An examination of the means for these two courses (322A and 322B) reveal no consistent effect.

In general, students seem to enter a course in psychology with a reasonably clear set of theoretical orientations (or preconcpetions) and these do not markedly change as a result of taking the course. This does not necessarily suggest that the orientations are always the same at the start of a course. To examine this variability, the pre-class means were examined (along with the post-class means) and an overall mean with an associated standard deviation were determined for each of the eight theoretical orientations. Table 20 presents the results of these computations. As can be seen, the variability around the means (both pre and post) is rather small, except in the case of Physicalism and to a lesser extent Biological Determinism. Given the great heterogeneity of these 27 courses, the variability is small indeed.

Finally, one might question the relationship between students and professors theoretical orientation and, in turn, the degree to which this relationship influenced student learning. There are a number of ways in which this question might be examined. A simple analysis by use of a chi-square was tried. For a sample of 12 courses (sampled over all levels) an appropriate chi-square was computed for each theoretical dimension. The procedure involved examining each student at each grade level

(A, B, C, D, etc.) and classifying them as to their moving toward or away from the instructor at the end of the course. This resulted in 96 matrices. Only two of the 96 chi-squares reached statistical significance (at the .05 level). Further analysis was discontinued in the face of consistent negative results. While there are many more complex analyses that must be examined, this preliminary analysis seems to suggest a lack of relationship between students and professors theoretical orientation and degree of learning.

The work on the theoretical orientation survey raises an interesting educational question. While the TOS is written with its questions related directly toward the discipline of psychology, the dimensions considered are hardly restricted to that one discipline. From another perspective, the TOS is concerned with such broad philosophical questions as freedom of the will, the limits of reductionism, the basic nature of knowledge, the limits of quantification, etc. These philosophical questions are ones that every educated person will have faced in one form or another throughout life. It would be most interesting to trace out the development of these philosophical positions in individuals over time. Clearly, they are present in college students (including first semester Freshmen) with some degree of consistency. On what basis have young people made these determinations and at what point in their lives? While these questions go far beyond my responsibilities for National Project III, I find them of great interest.

4. Techniques to Improve Teaching Pefformance.

Within the Department of Psychology, a committee has been established concerned with general evaluation questions (the emphasis of this group is on analysis and improvement of performance and as such they do not play a role in personnel decisions). At the college level, on June 23-26 a workshop was held for improvement of instruction. I was not involved directly in the workshop although I aided the presenter with a number of references to techniques and to resource individuals on campus.

Beyond the continuation of the work on faculty evaluation and the semi-contractual system, specific additional actions within the Psychology Department has been in two general areas. The instructors in the Educational Psychology courses have been meeting together to discuss instruction, visiting one another's classes, and, in general, attempting to improve instruction. The second general area of interest has been program evaluation. Interest in this area was stimulated by the award of a CAUSE grant to the Oswego Psychology and Mathematics Departments by the National Science Foundation. The CAUSE program includes program evaluation as one essential purpose. Both of these efforts have been underway for less than a year and, while promising, it is too early to give a summative judgment regarding their progress.

5. Video-tape presentation.

A video-tape was produced illustrating the evaluative system used in the Psychology Department at Oswego. The purpose of the tape is primarily to stimulate discussion by faculty about evaluation and development after viewing. I should be able to evaluate this over the next few years. The tape itself is divided into two parts. The first part (approximately 10 minutes long) is a "case history" of a faculty member from the time of his accepting a position at Oswego to the time where a judgment must be made regarding tenure. The second part (approximately 15 minutes in length) consists primarily of an interview format between the narrator and myself and consists of coverage of such topics as "why" the emphasis on evaluation at this point in time, some of the advantages and disadvantages of the Oswego system, greater details on "contract" writing and some summary conclusions. The tape was made in such a way that the first part (the case history) could be used by itself or in conjunction with the second part. Those interested in viewing or obtaining a copy of the tape should write to me at Oregon State University.

B. Work with Other Fund Associates

As mentioned in the Annual Report, three Fund Associate Institutions (Kansas State, Ball State and Illinois) have helped my work at Oswego. Kansas State and Ball State in work with the Theoretical Orientation Survey and the University of Illinois in some initial work we are doing in program evaluation (related to the work on the Evaluation Committee, mentioned above).

My primary effort this second year has been working with Lee Schroeder and Wendell Smith on the concerns about Governance, Collective Bargaining, and Quality of Instruction. After a number of attempts, the problem of collective bargaining was split off from the general concern over governance. After many a draft, the final paper was ready for consideration. It was decided that one Criteria report will consist of the material on collective bargaining. The paper has been aided by the thoughtful comments of Lee Schroeder and Wendell Smith and other members of National Project III as well as a number of administrators and union officials who have been kind enough to read and comment on one or another of the drafts.

I also took part in a conference held by Lee Schroeder (National Conference, Staff and Organizational Development in the Community College) by making a presentation of "The impact of collective bargaining on instructional development."

C. Comments and Observations

Work on National Project III has been a true educational experience. My views on higher education are broader now than they were two years ago.

The Criteria series seems to be working out better than I had originally thought. The readership has grown to a much higher level than I felt possible from our first returns. I would have preferred some additional form of dissemination directly to faculty members and I trust my video-tape will help in some small way in this direction.

In retrospect, my impression is that I tried to do too much in such a short period of time. Perhaps if I selected one or two project areas and restricted myself to those, the overall result would have been more productive.

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Table 1

DEPARTMENT OF PSYCHOLOGY -- STATE UNIVERSITY COLLEGE, OSWEGO, NEW YORK

Student Opinion of Teaching and Course[1]

Characteristics of the Teacher and the Teaching.

		A	B	C	D	E
1.	Is he willingly helpful when students have difficulty?	not helpful			actively helpful	
2.	Does he appear sensitive to student's feelings and problems?	responsive			unaware	
3.	Was he flexible?	flexible			rigid	
4.	Does he make students feel free to express ideas?	intolerant		encourages student ideas		
5.	Is he fair and impartial in his dealings with the students?	unfair			fair	
6.	Is his speech adequate for teaching?	good		unintelligible		
7.	Does he belittle students?	belittles			respects	
8.	Does he tell students when they have done particularly well?	never			always	
9.	Does he dwell upon the obvious?	dwells on obvious		introduces new ideas		
10.	Is he interested in the subject?	seems interested		seems uninterested		
11.	Does he use enough examples or illustrations to clarify material?	many			none	
12.	Does he present material in a well-organized fashion?	disorganized		well-organized		
13.	Are the course requirements clearly defined?	well-defined			not at all	
14.	Does he stimulate thinking?	stimulating			dull	
15.	Does he put his material across in an interesting way?	very interesting			dull	

[1]Adapted from the Michigan teacher rating scale by W. J. McKeachie

Table 1 (cont.)

16.	Is he willing to spend time in consultation with students outside of class hours?	A unwilling	B	C	D	E quite willing
17.	Is his professional knowledge apparent to the students?	A little	B	C	D	E greatly
18.	Does he make students feel free to ask questions?	A always	B	C	D	E never

19. Considering everything how would you rate this teacher? (Give him a "grade".)

A B C D E

II. Characteristics of the course.

20.	Are the objectives of the course clear?	A unclear	B	C	D	E clear
21.	Is the amount of work required appropriate for credit received?	A too much	B	C	D	E too little
22.	Was the assigned reading difficult?	A too easy	B	C	D	E too difficult
23.	Are the tests fair?	A fair	B	C	D	E unfair
24.	Are the grades assigned fairly?	A unfair	B	C	D	E fair
25.	How would you rate the contribution of the readings?	A excellent	B	C	D	E poor

26. All things considered what grade would you give this course?

A B C D E

27. If you were in a position to do it over again, in taking this course would you choose the same instructor? If yes, mark A; if no mark E and if maybe mark C.

28. Would you take additional courses with this instructor? If yes mark A; if no mark E; and if maybe mark C.

Table 2

Varimax Factor Loadings

Item Number	I	II	III	h^2
1	.83	.33	.01	.80
2	.84	.33	.13	.83
3	.85	.11	.12	.74
4	.77	.21	.15	.66
5	.65	.31	.30	.61
6	.32	.58	-.19	.47
7	.67	.12	.34	.58
8	.59	.22	-.16	.42
9	.39	.71	-.05	.67
10	.31	.61	.04	.48
11	.17	.73	.17	.59
12	.15	.77	.10	.63
13	-.03	.60	.39	.50
14	.54	.73	-.05	.83
15	.47	.76	.01	.80
16	.67	.16	-.05	.47
17	.24	.76	-.03	.63
18	.72	.23	.18	.61
19	.63	.71	.12	.92
20	.10	.68	.38	.62
21	.06	-.03	.60	.36
22	.03	-.04	.36	.13
23	.49	.29	.33	.43
24	.38	.31	.51	.50
25	.06	.30	.42	.27
26	.35	.63	.45	.72
27	.62	.62	.22	.82
28	.63	.62	.18	.82
Percent of variance	39.38	37.97	10.48	

Table 2 (cont.)

Varimax Three Factor Solution

		Factor Loading
Factor I: Teacher-Student Interaction		
3.	Was he flexible?	.85
2.	Does he appear sensitive to student's feelings and problems?	.84
1.	Is he willingly helpful when students have difficulty?	.83
4.	Does he make students feel free to express ideas?	.77
18.	Does he make students feel free to ask questions?	.72
7.	Does he belittle students?	.67
16.	Is he willing to spend time in consultation with students outside of class hours?	.67
5.	Is he fair and impartial in his dealings with the students?	.65
19.	Considering everything how would you rate this teacher? (Give him a "grade.") A B C D E	.63*
28.	Would you take additional courses with this instructor? If yes, mark A; if no, mark E; and if maybe, mark C.	.63*
27.	If you were in a position to do it over again, in taking this course would you choose the same instructor? If yes, mark A; if no, mark E; and if maybe, mark C.	.62*
3.	Does he tell students when they have done particularly well?	.59
14.	Does he stimulate thinking?	.54*
23.	Are the tests fair?	.49
15.	Does he put his material across in an interesting way?	.47*

Table 2 (cont.)

	Factor II: Lecture Presentation	
12.	Does he present material in a well-organized fashion?	.77
15.	Does he put his material across in an interesting way?	.76*
17.	Is his professional knowledge apparent to the students?	.76
11.	Does he use enough examples or illustrations to clarify material?	.73
14.	Does he stimulate thinking?	.73
9.	Does he dwell upon the obvious?	.71
19.	Considering everything how would you rate this teacher? (Give him a "grade".)	.71*
	A B C D E	
20.	Are the objectives of the course clear?	.68
26.	All things considered what grade would you give this course?	.63*
	A B C D E	
27.	If you were in a position to do it over again, in taking this course would you choose the same instructor? If yes, mark A; if no, mark E; and if maybe, mark C.	.62*
28.	Would you take additional courses with this instructor? If yes, mark A; if no, mark E; and if maybe, mark C.	.62*
10.	Is he interested in the subject?	.61
13.	Are the course requirements clearly defined?	.60
6.	Is his speech adequate for teaching?	.58
	Factor III: Difficulty	
21.	Is the amount of work required appropriate for credit received?	.59
24.	Are the grades assigned fairly?	.50
26.	All things considered what grade would you give this course?	.45*
	A B C D E	
25.	How would you rate the contribution of the readings?	.42
22.	Was the assigned reading difficult?	.36

*Have considerable loadings on other factors as well.

TABLE 3

Psychology 100: Graduate Assistants[1]

Item Number	Mean	Standard Deviation
1	4.03	.39
2	3.84	.51
3	3.84	.52
4	4.33	.49
5	4.24	.30
6	4.14	.49
7	4.39	.34
8	3.46	.41
9	3.69	.49
10	4.26	.43
11	3.69	.35
12	3.51	.44
13	3.69	.45
14	3.59	.69
15	3.41	.65
16	4.35	.37
17	3.49	.43
18	4.40	.41
19	3.89	.52
20	3.56	.50
21	3.96	.63
22	3.93	.80
23	3.50	.44
24	3.63	.39
25	3.49	.35
26	3.72	.40
27	3.71	.81
28	3.60	.77
Total average (28 items)	107.33	8.68

[1]Fall, 1971-Spring, 1975; 39 classes; 631 students

Table 4

Psychology 100: Faculty[1]

Item Number	Mean	Standard Deviation
1	3.87	.40
2	3.65	.43
3	3.55	.46
4	4.09	.48
5	4.09	.32
6	4.21	.39
7	4.21	.33
8	3.33	.61
9	3.65	.40
10	4.31	.39
11	3.97	.48
12	3.63	.53
13	4.14	.41
14	3.47	.60
15	3.30	.69
16	4.06	.44
17	3.97	.37
18	4.28	.37
19	3.91	.52
20	3.71	.50
21	3.98	.73
22	4.15	.65
23	3.62	.73
24	3.69	.69
25	3.57	.50
26	3.61	.57
27	3.57	.82
28	3.51	.75
Total average (28 items)	107.10	9.40

[1]Fall, 1971-Spring, 1975; 58 classes; 2196 students

Table 5

Required Courses[1]

Item Number	Mean	Standard Deviation
1	4.11	.49
2	3.73	.52
3	3.70	.49
4	3.96	.43
5	4.12	.43
6	4.35	.41
7	4.23	.47
8	3.49	.51
9	3.81	.40
10	4.26	.46
11	3.97	.46
12	3.86	.57
13	4.16	.42
14	3.55	.54
15	3.26	.63
16	4.18	.42
17	4.15	.45
18	4.35	.36
19	4.05	.53
20	3.95	.45
21	3.64	.86
22	3.92	.72
23	3.51	.62
24	3.86	.44
25	3.21	.58
26	3.47	.51
27	3.88	.77
28	3.78	.70
Total average (28 items)	108.52	9.99

[1]Fall, 1971-Spring, 1975; 82 classes; 1870 students

Table 6

Service Courses[1]

Item Number	Mean	Standard Deviation
1	3.90	.44
2	3.71	.51
3	3.63	.58
4	4.07	.44
5	4.05	.39
6	4.18	.47
7	4.23	.45
8	3.28	.57
9	3.61	.45
10	4.37	.40
11	3.95	.46
12	3.62	.49
13	4.23	.36
14	3.51	.60
15	3.31	.62
16	4.12	.38
17	4.12	.47
18	4.25	.40
19	3.89	.55
20	3.82	.41
21	3.94	.71
22	4.06	.61
23	3.51	.64
24	3.30	.43
25	3.43	.41
26	3.61	.42
27	3.57	.79
28	3.40	.75
Total average (28 items)	107.14	10.14

[1]Fall, 1971-Spring, 1975; 100 classes; 3917 students

Table 7

Elective Courses[1]

Item Number	Mean	Standard Deviation
1	3.97	.37
2	3.81	.46
3	3.65	.55
4	4.17	.38
5	4.16	.35
6	4.37	.40
7	4.25	.47
8	3.29	.54
9	3.93	.44
10	4.53	.33
11	4.26	.41
12	3.94	.55
13	4.30	.43
14	3.84	.48
15	3.70	.54
16	4.15	.38
17	4.33	.36
18	4.38	.33
19	4.15	.47
20	4.04	.42
21	4.11	.61
22	4.10	.69
23	3.65	.52
24	3.88	.46
25	3.73	.57
26	3.99	.40
27	4.04	.66
28	3.95	.65
Total average (28 items)	112.66	8.31

[1]Fall, 1971-Spring, 1975; 124 classes; 2946 students

Table 8

Graduate Courses[1]

Item Number	Mean	Standard Deviation
1	4.37	.40
2	4.02	.34
3	3.98	.31
4	4.17	.19
5	4.50	.30
6	4.69	.20
7	4.44	.41
8	3.62	.47
9	4.07	.37
10	4.69	.24
11	4.24	.29
12	4.06	.57
13	4.22	.32
14	4.07	.38
15	3.82	.36
16	4.51	.31
17	4.64	.25
18	4.43	.34
19	4.43	.23
20	4.04	.39
21	3.62	.83
22	3.49	.79
23	3.95	.70
24	3.73	.42
25	3.43	.70
26	4.10	.40
27	4.45	.45
28	4.17	.50
Total average (28 items)	115.85	4.33

[1]Fall, 1971-Spring, 1975; 11 classes; 156 students

Table 9

All Courses[1]

Item Number	Mean	Standard Deviation
1	3.98	.43
2	3.75	.48
3	3.67	.53
4	4.11	.44
5	4.14	.37
6	4.29	.44
7	4.25	.44
8	3.36	.55
9	3.77	.45
10	4.39	.41
11	4.03	.47
12	3.77	.55
13	4.17	.44
14	3.63	.58
15	3.44	.63
16	4.16	.40
17	4.12	.48
18	4.33	.37
19	4.01	.52
20	3.88	.46
21	3.93	.73
22	4.03	.69
23	3.58	.60
24	3.80	.48
25	3.50	.54
26	3.72	.50
27	3.80	.77
28	3.69	.74
Total average (28 items)	109.31	9.55

[1]Fall, 1971-Spring, 1975; 414 classes; 11,716 students

Table 10

Required Courses

Item	Statistics Psych 280 $\bar{X}$	SD	Research Methods Psych 290 $\bar{X}$	SD	Experimental Psych. Psych 300 $\bar{X}$	SD
1	4.03	0.56	4.25	0.36	4.10	0.57
2	3.65	0.57	3.85	0.38	3.81	0.61
3	3.71	0.50	3.73	0.42	3.81	0.55
4	3.83	0.48	4.05	0.35	4.09	0.36
5	4.24	0.37	4.12	0.40	4.01	0.53
6	4.46	0.26	4.33	0.45	4.33	0.38
7	4.26	0.52	4.29	0.35	4.20	0.47
8	3.26	0.48	3.58	0.36	3.59	0.69
9	3.87	0.33	3.79	0.36	3.80	0.55
10	4.27	0.23	4.39	0.38	4.34	0.51
11	4.10	0.43	3.97	0.36	3.93	0.58
12	4.05	0.46	3.81	0.45	3.67	0.84
13	4.33	0.26	4.09	0.35	4.04	0.66
14	3.62	0.54	3.58	0.40	3.53	0.67
15	3.32	0.61	3.33	0.54	3.12	0.76
16	4.02	0.47	4.26	0.27	4.29	0.52
17	4.17	0.33	4.20	0.47	4.21	0.57
18	4.33	0.41	4.39	0.34	4.35	0.31
19	4.12	0.58	4.11	0.41	3.95	0.63
20	4.03	0.37	3.98	0.34	3.87	0.71
21	4.09	0.59	3.52	0.86	3.54	0.89
22	3.86	0.69	4.19	0.60	3.66	0.97
23	3.61	0.70	3.67	0.45	3.33	0.72
24	3.99	0.37	3.94	0.40	3.68	0.51
25	3.32	0.52	3.12	0.73	3.38	0.40
26	3.53	0.47	3.54	0.45	3.55	0.54
27	3.88	0.84	4.02	0.59	3.76	0.87
28	3.87	0.76	3.88	0.54	3.57	0.87
Number of Classes	27		30		17	

Table 11

Service Courses

Item	Child Psych Psych 322 $\bar{X}$	SD	Adolescent Psych Psych 323 $\bar{X}$	SD	Educational Psych. Psych 330 $\bar{X}$	SD
1	3.61	0.35	3.80	0.49	4.17	0.32
2	3.37	0.35	3.72	0.55	3.97	0.47
3	3.17	0.35	3.84	0.68	3.90	0.43
4	3.73	0.31	4.20	0.45	4.21	0.39
5	3.88	0.31	4.11	0.45	4.14	0.38
6	4.10	0.49	3.96	0.54	4.32	0.33
7	4.14	0.34	4.28	0.38	4.26	0.53
8	2.94	0.47	3.29	0.61	3.55	0.51
9	3.42	0.35	3.39	0.49	3.81	0.32
10	4.31	0.38	4.24	0.50	4.46	0.33
11	3.95	0.42	3.80	0.39	3.98	0.50
12	3.63	0.53	3.44	0.49	3.61	0.40
13	4.31	0.26	4.09	0.43	4.23	0.36
14	3.17	0.50	3.39	0.57	3.83	0.56
15	3.01	0.53	3.19	0.62	3.57	0.59
16	3.96	0.37	4.05	0.41	4.32	0.33
17	3.94	0.38	3.95	0.62	4.31	0.33
18	4.05	0.45	4.33	0.36	4.34	0.31
19	3.66	0.49	3.77	0.62	4.09	0.48
20	3.81	0.41	3.74	0.42	3.84	0.41
21	4.05	0.65	4.15	0.57	3.72	0.72
22	4.06	0.62	3.99	0.51	4.10	0.68
23	3.09	0.55	3.33	0.58	3.98	0.46
24	3.70	0.26	3.81	0.51	3.86	0.50
25	3.40	0.28	3.31	0.27	3.55	0.54
26	3.52	0.42	3.55	0.44	3.70	0.42
27	3.26	0.72	3.51	0.85	3.80	0.74
28	3.10	0.70	3.33	0.77	3.61	0.69
Number of Classes	32		25		37	

Table 12

Elective Courses

Item	Topics in Psych. Psych 210 $\bar{X}$	SD	Social Psych. Psych 340 $\bar{X}$	SD	Abnormal Psych Psych 350 $\bar{X}$	SD
1	4.07	0.16	3.94	0.30	3.79	0.33
2	4.00	0.35	3.73	0.36	3.71	0.43
3	3.98	0.32	3.45	0.35	3.51	0.43
4	4.45	0.28	4.12	0.32	4.13	0.28
5	4.23	0.16	4.11	0.28	4.15	0.33
6	4.52	0.34	4.45	0.37	4.21	0.44
7	4.44	0.25	4.24	0.32	4.27	0.32
8	3.64	0.39	3.30	0.24	2.84	0.29
9	3.91	0.41	4.06	0.38	3.86	0.54
10	4.56	0.39	4.57	0.25	4.52	0.23
11	4.24	0.32	4.41	0.25	4.36	0.36
12	3.63	0.49	4.40	0.20	3.83	0.64
13	4.03	0.29	4.49	0.25	4.44	0.31
14	3.89	0.45	3.95	0.33	3.67	0.54
15	3.52	0.49	3.83	0.44	3.69	0.63
16	4.21	0.18	3.93	0.28	4.03	0.35
17	4.10	0.35	4.30	0.35	4.35	0.42
18	4.50	0.24	4.33	0.32	4.35	0.22
19	4.13	0.38	4.26	0.37	4.06	0.54
20	3.75	0.43	4.19	0.25	4.17	0.35
21	3.93	0.71	3.92	0.47	4.35	0.45
22	3.91	0.79	3.91	0.70	4.27	0.61
23	3.80	0.36	3.34	0.44	3.56	0.38
24	3.89	0.32	3.66	0.45	3.91	0.36
25	3.51	0.59	3.66	0.29	4.00	0.63
26	3.78	0.45	3.97	0.30	4.10	0.35
27	3.95	0.46	4.04	0.59	4.01	0.77
28	4.01	0.32	3.89	0.66	3.91	0.71
Number of Classes	8		22		42	

Table 12 (cont.)

Item	Topics in General Psych.		Topics in Personality and Social Psych.		Topics in Abnormal Psych.	
	Psych 410		Psych 440		Psych 450	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1	4.16	0.46	4.09	0.27	3.79	0.43
2	3.95	0.52	4.04	0.48	3.59	0.51
3	4.00	0.65	3.86	0.53	3.29	0.70
4	4.19	0.52	4.29	0.59	3.99	0.51
5	4.24	0.52	4.33	0.23	4.04	0.31
6	4.45	0.35	4.59	0.29	4.40	0.34
7	4.26	0.71	4.26	0.46	3.97	0.67
8	3.60	0.59	3.73	0.48	3.36	0.48
9	3.90	0.40	3.91	0.31	3.99	0.48
10	4.58	0.38	4.49	0.22	4.45	0.49
11	4.17	0.48	3.71	0.91	4.24	0.31
12	3.94	0.42	4.02	0.63	3.86	0.65
13	4.13	0.51	4.65	0.14	4.20	0.49
14	3.94	0.46	3.87	0.14	3.99	0.43
15	3.65	0.49	3.70	0.24	3.71	0.54
16	4.31	0.44	4.46	0.15	4.11	0.43
17	4.43	0.35	4.19	0.25	4.27	0.25
18	4.35	0.45	4.54	0.30	4.17	0.45
19	4.18	0.44	4.38	0.29	4.00	0.39
20	3.86	0.44	4.36	0.34	3.88	0.41
21	4.10	0.85	3.55	0.74	4.19	0.56
22	4.24	0.80	3.31	0.71	3.99	0.57
23	3.98	0.64	4.06	0.55	3.65	0.38
24	3.99	0.67	4.27	0.19	3.76	0.34
25	3.56	0.52	3.79	0.57	3.43	0.47
26	3.93	0.48	3.86	0.14	3.93	0.29
27	4.09	0.64	4.26	0.39	3.93	0.42
28	3.93	0.70	4.34	0.33	3.87	0.45
Number of Classes	20		4		8	

Table 12 (cont.)

Advanced Research Methods

Item	Psych 480 $\bar{X}$	SD		
1	4.29	0.14		
2	4.15	0.07		
3	4.37	0.47		
4	4.32	0.17		
5	4.27	0.33		
6	4.57	0.07		
7	4.21	0.20		
8	3.32	0.37		
9	4.06	0.20		
10	4.53	0.26		
11	4.08	0.27		
12	3.29	0.18		
13	3.22	0.28		
14	4.20	0.17		
15	3.92	0.09		
16	4.41	0.25		
17	4.47	0.32		
18	4.58	0.15		
19	4.23	0.08		
20	3.40	0.48		
21	4.65	0.19		
22	4.58	0.37		
23	4.07	0.16		
24	4.20	0.25		
25	3.33	0.23		
26	4.00	0.00		
27	4.33	0.47		
28	4.21	0.52		
Number of Classes	3			

Table 13

WEIGHTED PROMOTION AND RETENTION CRITERIA

Name _____

Date _____

For consideration for retention and/or promotion, the evaluative criteria should be weighted as follows:

	Required %	Optional 20% Distribution	Total Distribution
1. Mastery of subject matter			_____
2. Effectiveness in teaching	55		_____
3. Scholarly ability	25		_____
4. University service			_____
5. Continuing growth			_____
			100%

Each of the criteria should be evaluated as follows:

1. Mastery of subject matter:

2. Effectiveness in teaching:

3. Scholarly ability:

4. University service:

5. Continuing growth:

_____ Faculty Member

_____ Chairperson

Table 14

SUMMARY EVALUATION FORM

- FACULTY -

Name of Person Under Evaluation_____ Source of Evaluation_____

	EVALUATIVE WEIGHTS			PERFORMANCE LEVEL				
Criteria for Evaluation	Minimal	Optional*	Total	Unacceptable/ Unsatisfactory	Below Average	Average	Above Average	Outstanding
DIRECT INSTRUCTIONAL CONTRIBUTIONS Includes Effectiveness in Teaching, Mastery of Subject Matter, and Continued Growth	45			0	1	2	3	4
SCHOLARLY ABILITY	15			0	1	2	3	4
EFFECTIVENESS OF UNIVERSITY SERVICE	15			0	1	2	3	4
TOTAL	75	25	100					

*The optional 25% to be distributed by the individual faculty member in consultation with his/her chairperson.

Table 15

The statements below represent a wide range of issues pertaining to theory and methods in psychology. Please indicate the extent of your agreement or disagreement with each one by drawing a line through the appropriate alternative on the answer form. Strictly speaking, there are no right or wrong answers; your answers should reflect your own personal attitudes and inclinations. You may feel that some of the items are vague, obscure, or improperly stated, but try to decide in each case whether you agree or disagree with the item. Use the cannot say category no more than necessary.

1. A science is likely to progress most rapidly if researchers devote themselves primarily to the systematic gathering of factual information and engage in little elaborate speculation or theory building.

2. Human behavior is characterized in all aspects by lawful regularity and thus, in principle, it is completely predictable.

3. All behavior, except for a few simple reflexes, is learned.

4. Psychologists should be as concerned with explaining private conscious experience as they are with explaining overt behavior.

5. For many research purposes, it is best to permit many relevant variables to interact in a natural fashion and then analyze the results, rather than try to effect strict control.

6. Individual differences in personality are governed to a high degree by heredity.

7. All the concepts used in psychological theory should be explicitly definable in terms of observed physical events.

8. The use of mathematical models and equations in theory often serves to create a false impression of scientific respectability, instead of furthering our understanding.

9. It is just as important for psychological researchers to formulate theoretical interpretations as it is to accumulate specific facts about behavior.

10. In principle, human behavior cannot be completely predicted, because people can choose to act in ways that we have no basis for expecting.

11. Except for a few elementary drives like hunger and thirst, all human motives are learned.

12. The individual subject's personal account of his private conscious experience is one of the most valuable sources of psychological data.

13. Highly controlled experiments often give a misleading picture of the complex interactions that actually occur under natural circumstances.

14. The direction of human behavior is governed to a considerable extent by inborn predispositions.

15. It is best to define perception just in terms of stimulus-response relationships, rather than in terms of internal events that cannot be publicly observed.

16. Elaborate forms of statistical analysis tend to be over-emphasized in psychology.

17. A theory should consist mainly of inductive generalizations based on observations, with little in the way of constructions or hypothetical formulations contributed by the theorist.

18. Human actions are just as strictly determined by whatever causes are operating as all other physical events are.

19. Nearly all individual differences in human behavior can be accounted for in terms of past reinforcements.

20. Psychologists can gain many valuable insights through meditation and other procedures designed to expand or illuminate private experience.

21. In the long run researchers can achieve most if they devote each individual study to a very specific, circumscribed problem.

22. Much of the variation in human temperament is governed by inborn constitution.

23. Any meaningful statement about mental events can be translated into a statement about behavior with no serious loss of meaning.

24. Psychological theory could benefit greatly from more extensive use of mathematical and geometric models.

25. The most valuable theories are ones involving speculation that goes well beyond established facts and points the way to future discoveries.

26. In principle, an individual's choice or decision can never be fully predicted from antecedent conditions or events.

27. Nearly all the behavioral tendencies that have been called instinctive in people are actually products of learning.

28. The primary goal of psychologists should be the explanation of observable behavior, rather than the explanation of conscious events.

29. We would gain more valuable information if researchers spent more time studying total action patterns in relation to the total influencing environment and less time relating single responses to a few specific stimuli.

30. An individual's pattern of relative strengths and weaknesses in verbal, mathematical, and perceptual abilities is governed to a great extent by genetic factors.

31. As far as possible, the stimulus and response variables used in psychological theory should be defined in strictly physical terms.

32. Mathematical equations are not a very appropriate device for expressing the most fundamental relationships and principles in psychological theory.

33. Most of the important landmarks in the history of any science are empirical discoveries, not theories.

34. Human behavior is not completely predictable, because people are too individually unique.

35. Every feature of human behavior is susceptible to extensive modification by learning.

36. At present, there is as great a need in psychological research for sensitive introspective observers as for refinements in design and instrumentation.

37. Our most important information in psychology is obtained by well-controlled experiments in which we systematically vary one or a few independent variables and record their effects on a specific dependent variable.

38. Individual differences in biochemical constitution underlie much important variation in behavior.

39. All the concepts used in psychological theory should be explicitly definable in terms of operations of observation and measurement.

40. Many of the most important relationships in psychology can best be examined by complex kinds of statistical analysis.

41. Single, isolated facts and findings are of little value until they are related to other facts and findings by theoretical interpretation.

42. Strictly speaking, there are no random or chance events, since all events are characterized by lawful regularities.

43. Every frequently recurring action is controlled or regulated to a great extent by environmental influences or effects, whether the individual who displays it realizes this or not.

44. Psychologists should devote more effort to explaining observable behavior than to explaining conscious experience.

45. Psychologists often get their best insights from research activities in which they do not try to achieve careful measurement or quantification.

46. There are marked hereditary differences among people in susceptibility to mental illness.

47. In scientific writing, psychologists should either avoid making statements about conscious phenomena or try to translate such statements into statements about physical conditions and events.

48. As this science progresses, psychological theories will tend increasingly to be composed of abstract mathematical or logical equations.

49. Science can best advance if theorists are willing to speculate freely beyond the limits of currently available evidence.

50. In principle, we could predict all of a person's behavior if we had complete knowledge of his physiological condition and of the events that had previously occurred in his life.

51. Higher mental processes are largely products of learning.

52. All aspects of conscious human experience should be considered appropriate subject matter for psychology.

53. The explanation of behavior in complex social systems probably requires the use of principles that are not manifested in interactions within small groups.

54. Many of the behavioral differences between men and women are a function of inherent biological differences between the sexes.

55. It is best to define learning just in terms of a change in response, without any reference to events that cannot be publicly observed.

56. A strong insistence on precise measurement and quantification is likely to cause psychologists to neglect important areas of research.

57. When general theories are constructed before much systematic research has been done in an area, they tend to impede scientific progress.

58. The experience of personal choice is actually an illusion.

59. Individual differences in personality are mostly a product of environmental influence.

60. Psychologists should strive to develop a more elaborate and precise vocabulary for describing conscious emotional states and other qualities of experience.

61. Psychologists should undertake more studies of broad scope, aimed at charting major areas of investigation, before proceeding to test so many specific hypotheses.

62. The structure of human thought is governed to a great extent by innate factors.

63. A good indicator of the maturity of a science is the extent to which its explanatory principles are stated in a precise quantitative form.

Table 16

10
20
30
40
THEORETICAL
FACTUAL
WILL
STRICT CAUSALITY
EXPERIENCE
BEHAVIOR CONTENT
HOLISM
ELEMENTARISM
BIOLOG. DETERMINISM
ENVIRONM. DETERMINISM
PHYSICALISM
QUAL.
QUANT.

Table 17

Theoretical Orientation Survey Reliabilities

THEORETICAL DIMENSIONS	Classes													
	100-A		100-B		100-C		100-D		100-E		100-F		100-G	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Factual vs. Theoretical	.44	.52	.45	.64	.39	-.03	.45	.31	.80	.50	.53	.58	.34	.59
2. Free Will vs. Determinism	.58	.40	.00	.59	.64	.54	.25	.88	-.09	.08	.17	.78	.80	.88
3. Experiential vs. Behavior Content	.39	.23	.20	.19	.41	.76	.45	.39	.11	.40	.68	.77	.47	.09
4. Holism vs. Elementarism	-.03	.35	.73	.74	.66	.83	.57	.30	.51	.65	.84	.64	.65	.54
5. Biological Determinism	.74	.56	.86	.76	.71	.83	.56	.75	.80	.85	.71	.87	.61	.74
6. Environmental Determinism	.54	.61	.66	.68	.66	.66	.71	.75	.47	.73	.55	.75	.42	.84
7. Physicalism	.59	.65	.80	.34	.36	.64	.66	.59	.33	.38	.68	.40	.39	.78
8. Qualitative vs. Quantitative	.44	.59	.60	.68	.74	.65	.35	.63	-.06	.30	.54	.82	.69	.46

Table 17 (cont.)

THEORETICAL DIMENSIONS	Classes													
	280-A		280-B		280-C		290-A		290-B		300-A		300-B	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Factual vs. Theoretical	.41	.26	.57	.13	.75	.57	.62	.21	.77	.36	-.32	.56	.45	.70
2. Free Will vs. Determinism	.54	.57	.83	.82	.77	.91	.64	-.20	.71	.44	.30	.59	.20	.54
3. Experiential vs. Behavior Content	.75	.65	.21	.04	.52	.49	.63	.82	.76	.48	.61	.77	.75	.86
4. Holism vs. Elementarism	.15	.55	.76	.26	.59	.66	.75	.44	.45	.85	.74	.71	.16	.77
5. Biological Determinism	.71	.69	.77	.67	.61	.88	.80	.87	.84	.91	.78	.88	.67	.86
6. Environmental Determinism	.79	.69	.83	.83	.91	.88	.51	.61	.81	.92	.78	.84	.85	.84
7. Physicalism	.63	.33	.48	.76	-.01	.65	.13	.75	.66	.78	.65	.63	.62	.39
8. Qualitative vs. Quantitative	.63	.70	.88	.87	.23	.82	.69	.79	.85	.87	.63	.78	.59	.80

Table 17 (cont.)

THEORETICAL DIMENSIONS	Classes															
	322-A		322-B		330-A		330-B		330-C		350-A		350-B		350-C	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Factual vs. Theoretical	.25	.48	.29	.58	.66	.29	.52	.13	.56	.63	.53	.48	.41	.73	.62	.60
2. Free Will vs. Determinism	.27	.81	.55	.51	.42	.68	.76	.06	.62	.81	.51	.75	-.04	.49	.67	.56
3. Experiential vs. Behavior Content	.62	.38	.48	.59	.34	.09	.46	.54	.18	.44	.73	.59	.15	.32	.21	.36
4. Holism vs. Elementarism	.62	.50	.58	.33	.66	.60	.32	.78	.56	.74	.05	.34	.45	.71	.57	.79
5. Biological Determinism	.62	.79	.68	.90	.80	.80	.73	.66	.84	.88	.71	.79	.79	.87	.79	.86
6. Environmental Determinism	.51	.74	.73	.71	.82	.80	.66	.59	.82	.78	.80	.85	.67	.69	.72	.60
7. Physicalism	.71	.70	.56	.36	.22	.33	.26	.75	.75	.87	.80	.56	.18	.12	.65	.51
8. Qualitative vs. Quantitative	.73	.82	.74	.61	.71	.75	.59	-.01	.73	.84	.55	-.27	.62	.66	.77	.69

Table 17 (cont.)

THEORETICAL DIMENSIONS	Classes									
	410		440-A		440-B		450		470	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Factual vs. Theoretical	.78	.94	.82	.87	.68	.63	.80	.76	.54	.19
2. Free Will vs. Determinism	.96	.99	.74	.92	.63	.74	.82	.62	.87	.09
3. Experiential vs. Behavior Content	.84	.88	.73	.81	.22	.74	.90	.85	.86	.80
4. Holism vs. Elementarism	.81	.66	.69	.81	.65	.60	.53	.63	.62	.55
5. Biological Determinism	.81	.87	.89	.93	.79	.91	.87	.95	.66	.92
6. Environmental Determinism	.82	.66	.79	.83	.83	.93	.85	.82	.94	.82
7. Physicalism	.36	.76	.78	.87	.61	.57	.72	.86	.79	.80
8. Qualitative vs. Quantitative	.40	.29	.82	.81	.31	.78	.79	.71	.75	.58

COURSE IDENTIFICATION	
100	Principles of Human Behavior (Introd. Psych.)
280	Analysis of Psychological Data (Introd. Stat.)
290	Research Methods in Psychology (First Laboratory Course)
300	Experimental Psychology (Second Laboratory Course, Course is given under a number of topic areas)
322	Child Psychology
330	Educational Psychology
350	Abnormal Psychology
410	Theories of Learning
440 A	Theories of Personality
440 B	Industrial Psychology
450	Behavior Modification
470	History and Systems of Psychology

Table 18

Mean Reliabilities of the Theoretical Orientation Survey for 100, 200, 300 and 400 Level Courses

THEORETICAL DIMENSIONS	Classes							
	100		200		300		400	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Factual vs. Theoretical	.49	.52	.62	.31	.46	.52	.72	.68
2. Free Will vs. Determinism	.36	.59	.70	.71	.43	.58	.80	.67
3. Experiential vs. Behavior Content	.39	.40	.57	.50	.45	.49	.71	.82
4. Holism vs. Elementarism	.57	.58	.54	.55	.47	.63	.66	.65
5. Biological Determinism	.71	.77	.75	.80	.74	.83	.80	.92
6. Environmental Determinism	.57	.72	.77	.79	.74	.59	.85	.81
7. Physicalism	.54	.54	.38	.65	.54	.56	.65	.77
8. Qualitative vs. Quantitative	.49	.59	.66	.81	.67	.62	.61	.63

Table 19

Means and ANOVA Data for the
Theoretical Orientation Survey

Class: Introductory - Number 100-A - N=25

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.36	19.44	_____
2. Causality vs. Free Will	18.84	18.44	_____
3. Experiential vs. Behav. Content	20.20	19.52	_____
4. Holism vs. Elementarism	22.08	23.76	_____
5. Biological Determinism	23.20	23.28	_____
6. Environmental Determinism	27.00	27.68	_____
7. Physicalism	19.80	17.84	_____
8. Qualitative vs. Quantitative	22.96	21.60	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.05

Class: Introductory - Number 100-B - N=20

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.5	20.65	_____
2. Causality vs. Free Will	17.2	17.45	_____
3. Experiential vs. Behav. Content	19.25	21.2	_____
4. Holism vs. Elementarism	21.3	26.55	_____
5. Biological Determinism	25.9	24.65	_____
6. Environmental Determinism	28.4	28.1	_____
7. Physicalism	20.2	20.6	_____
8. Qualitative vs. Quantitative	23.1	26.55	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	.001
Significant Interaction Effects:	.01

Table 19 (cont.)

Class: Introductory - Number 100-C - N=23

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	21.29	20.29	_____
2. Causality vs. Free Will	18.71	19.67	_____
3. Experiential vs. Behav. Content	20.38	22.08	_____
4. Holism vs. Elementarism	23.29	24.42	_____
5. Biological Determinism	25.63	25.75	_____
6. Environmental Determinism	29.21	26.63	_____
7. Physicalism	20.67	21.58	_____
8. Qualitative vs. Quantitative	23.75	23.29	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.05

Class: Introductory - Number 100-D - N=26

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.42	21.04	_____
2. Causality vs. Free Will	17.27	21.15	_____
3. Experiential vs. Behav. Content	19.69	19.92	_____
4. Holism vs. Elementarism	21.80	25.04	_____
5. Biological Determinism	23.38	23.54	_____
6. Environmental Determinism	28.12	29.38	_____
7. Physicalism	19.58	20.69	_____
8. Qualitative vs. Quantitative	21.85	23.88	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	.001
Significant Interaction Effects:	.05

Table 19 (cont.)

Class: Introductory - Number 100-E - N=25

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.92	19.60	19.76
2. Causality vs. Free Will	18.32	18.64	18.48
3. Experiential vs. Behav. Content	19.88	19.48	19.68
4. Holism vs. Elementarism	23.20	23.56	23.38
5. Biological Determinism	24.68	25.84	25.26
6. Environmental Determinism	27.72	27.04	27.38
7. Physicalism	20.08	18.64	19.36
8. Qualitative vs. Quantitative	23.76	22.84	23.30

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects.	n.s.

Class: Introductory - Number 100-F - N=12

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.67	18.50	19.08
2. Causality vs. Free Will	18.50	18.33	18.415
3. Experiential vs. Behav. Content	20.91	19.67	20.29
4. Holism vs. Elementarism	22	23.67	22.83
5. Biological Determinism	22.33	21.75	22.04
6. Environmental Determinism	27.75	28.17	27.96
7. Physicalism	19.25	19.58	19.41
8. Qualitative vs. Quantitative	23	22.83	22.91

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Introductory - Number 100-G - N=19

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.37	19.47	_____
2. Causality vs. Free Will	19.58	17.79	_____
3. Experiential vs. Behav. Content	19.58	21.58	_____
4. Holism vs. Elementarism	22.74	23.89	_____
5. Biological Determinism	25.58	22.68	_____
6. Environmental Determinism	27.63	27.84	_____
7. Physicalism	19.26	19	_____
8. Qualitative vs. Quantitative	23.16	22.68	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.05

Class: Statistics - Number 280-A - N=20

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.35	19.4	19.38
2. Causality vs. Free Will	18.1	17.45	17.78
3. Experiential vs. Behav. Content	17.8	19.35	18.58
4. Holism vs. Elementarism	22.9	22.7	22.8
5. Biological Determinism	22.5	22.35	22.42
6. Environmental Determinism	28.35	27.15	27.75
7. Physicalism	19.15	17.45	18.3
8. Qualitative vs. Quantitative	22.1	23.2	22.65

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Statistics - Number 280-B - N= 16

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	18.75	19.63	19.19
2. Causality vs. Free Will	18.56	18.63	18.6
3. Experiential vs. Behav. Content	19.19	18.81	19
4. Holism vs. Elementarism	23.69	24.69	24.19
5. Biological Determinism	24.13	24.25	24.19
6. Environmental Determinism	28.75	27.69	28.22
7. Physicalism	18.69	17.5	18.09
8. Qualitative vs. Quantitative	23.13	24.13	23.63

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Statistics - Number 280-C - N=16

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19	19.44	19.22
2. Causality vs. Free Will	18.37	18.69	18.53
3. Experiential vs. Behav. Content	20.69	18.81	19.75
4. Holism vs. Elementarism	25.19	26.44	25.82
5. Biological Determinism	20.37	20.25	20.31
6. Environmental Determinism	29.06	27.69	28.38
7. Physicalism	19.19	19.94	19.57
8. Qualitative vs. Quantitative	24.44	25.25	24.85

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Research Methods in Psychology - Number 290-A - N=18

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	21.78	19.5	_____
2. Causality vs. Free Will	17.28	17.78	_____
3. Experiential vs. Behav. Content	19.33	20.56	_____
4. Holism vs. Elementarism	24.67	26.39	_____
5. Biological Determinism	20.33	18.83	_____
6. Environmental Determinism	28.22	27.89	_____
7. Physicalism	17.89	18.67	_____
8. Qualitative vs. Quantitative	22.44	22.89	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.05

Class: Research Methods in Psychology - Number 290-B - N=18

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.95	19.42	20.19
2. Causality vs. Free Will	18.21	18.37	18.29
3. Experiential vs. Behav. Content	20.53	20.05	20.29
4. Holism vs. Elementarism	25.11	25.74	25.43
5. Biological Determinism	20.95	23.26	22.11
6. Environmental Determinism	28.58	26.37	27.48
7. Physicalism	18.63	18.89	18.76
8. Qualitative vs. Quantitative	23.84	24.68	24.26

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Experimental: Physiological - Number 300-A - N=21

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.4	18.45	18.93
2. Causality vs. Free Will	18.4	18.1	18.25
3. Experiential vs. Behav. Content	19.1	18.55	18.83
4. Holism vs. Elementarism	23.45	23.1	23.28
5. Biological Determinism	22.25	22.75	22.50
6. Environmental Determinism	30	27.45	28.73
7. Physicalism	17.25	18.2	17.73
8. Qualitative vs. Quantitative	22.8	22.35	22.58

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Experimental: Human Motivation & Emotion - Number 300-B - N=9

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.33	17.56	18.45
2. Causality vs. Free Will	19	18.22	18.61
3. Experiential vs. Behav. Content	19.67	19.44	19.56
4. Holism vs. Elementarism	25	25	25
5. Biological Determinism	24.33	25	24.67
6. Environmental Determinism	25.78	27	26.39
7. Physicalism	18	18.11	18.05
8. Qualitative vs. Quantitative	24.78	24.89	24.84

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Child Psychology - Number 322-A - N=32

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.59	19.53	_____
2. Causality vs. Free Will	17.56	18.81	_____
3. Experiential vs. Behav. Content	18.66	20	_____
4. Holism vs. Elementarism	23.87	23.5	_____
5. Biological Determinism	25.22	28.44	_____
6. Environmental Determinism	27.5	26.09	_____
7. Physicalism	18.31	18.69	_____
8. Qualitative vs. Quantitative	22.94	22.22	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.001

Class: Child Psychology - Number 322-B - N=32

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.16	17.87	_____
2. Causality vs. Free Will	17.47	17.91	_____
3. Experiential vs. Behav. Content	19.47	20.97	_____
4. Holism vs. Elementarism	23.72	24.34	_____
5. Biological Determinism	23.78	22.47	_____
6. Environmental Determinism	29.19	26.16	_____
7. Physicalism	19.44	18.87	_____
8. Qualitative vs. Quantitative	22.31	22.94	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	.001

Table 19 (cont.)

Class: Educational Psychology - Number 330-A - N=22

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.91	19.91	_____
2. Causality vs. Free Will	17.86	17.91	_____
3. Experiential vs. Behav. Content	19.91	20.41	_____
4. Holism vs. Elementarism	23.04	22.36	_____
5. Biological Determinism	22.32	21.82	_____
6. Environmental Determinism	27.36	25.91	_____
7. Physicalism	18.41	17.36	_____
8. Qualitative vs. Quantitative	22.27	21.32	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	.05
Significant Interaction Effects:	n.s.

Class: Educational Psychology - Number 330-B - N=21

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.57	19.81	20.19
2. Causality vs. Free Will	17.76	18.10	17.93
3. Experiential vs. Behav. Content	20.38	20.67	20.53
4. Holism vs. Elementarism	23	21.81	22.41
5. Biological Determinism	23.76	22.48	23.12
6. Environmental Determinism	28.33	28.67	28.50
7. Physicalism	18.62	18.67	18.65
8. Qualitative vs. Quantitative	21.43	21.43	21.43

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Educational Psychology - Number 330-C - N=23

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19	19.37	19.19
2. Causality vs. Free Will	17.29	17.08	17.19
3. Experiential vs. Behav. Content	19.54	19.25	19.40
4. Holism vs. Elementarism	24	23.79	23.90
5. Biological Determinism	22.37	23.75	23.06
6. Environmental Determinism	27.83	27.67	27.75
7. Physicalism	18.83	19.04	18.94
8. Qualitative vs. Quantitative	22.92	22.62	22.77

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Abnormal Psychology - Number 350-A - N=20

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.7	19.2	_____
2. Causality vs. Free Will	18.4	17.6	_____
3. Experiential vs. Behav. Content	19.8	19.15	_____
4. Holism vs. Elementarism	24.15	24	_____
5. Biological Determinism	25.3	24.25	_____
6. Environmental Determinism	26.35	25.7	_____
7. Physicalism	19.2	17.35	_____
8. Qualitative vs. Quantitative	24.2	23.95	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	.01
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Abnormal Psychology - Number 350-B - N=23

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20.13	20.39	20.26
2. Causality vs. Free Will	17.04	15.91	16.48
3. Experiential vs. Behav. Content	19.87	20.09	19.98
4. Holism vs. Elementarism	22.09	22.43	22.26
5. Biological Determinism	23.69	23.35	23.52
6. Environmental Determinism	27.17	26.78	26.98
7. Physicalism	19.13	17.65	18.39
8. Qualitative vs. Quantitative	20.39	20.74	20.57

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Abnormal Psychology - Number 350-C - N=27

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.81	21.18	20.50
2. Causality vs. Free Will	18.56	17.59	18.08
3. Experiential vs. Behav. Content	19.85	20.41	20.13
4. Holism vs. Elementarism	22.74	23.55	23.15
5. Biological Determinism	24.33	24.22	24.28
6. Environmental Determinism	29.26	27.63	28.45
7. Physicalism	19.11	18.59	18.85
8. Qualitative vs. Quantitative	22.78	21.89	22.34

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Theories of Learning - Number 410 - N=7

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	18.43	20.43	19.43
2. Causality vs. Free Will	23	22.71	22.86
3. Experiential vs. Behav. Content	20	19.14	19.57
4. Holism vs. Elementarism	26.57	26.14	26.36
5. Biological Determinism	22.43	22	22.21
6. Environmental Determinism	29.86	29.43	29.65
7. Physicalism	19	19.43	19.22
8. Qualitative vs. Quantitative	22.57	24.57	23.57

ANOVA RESULTS

Significant Orientation Effects:	.05
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Theories of Personality - Number 440-A - N=15

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	18.4	18.8	18.6
2. Causality vs. Free Will	18.93	19.4	19.17
3. Experiential vs. Behav. Content	20.53	19.27	19.9
4. Holism vs. Elementarism	24.67	23.8	24.24
5. Biological Determinism	18.73	18.73	18.73
6. Environmental Determinism	27.73	27.27	27.5
7. Physicalism	18.73	19.73	19.23
8. Qualitative vs. Quantitative	23.07	22.53	22.8

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Table 19 (cont.)

Class: Industrial Psychology - Number 440-B - N=4

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	17	21.25	19.13
2. Causality vs. Free Will	17.5	18.75	18.13
3. Experiential vs. Behav. Content	15	17.75	16.38
4. Holism vs. Elementarism	20.75	18.5	19.63
5. Biological Determinism	22	26.5	24.25
6. Environmental Determinism	26.5	26	26.25
7. Physicalism	18.25	18.75	18.50
8. Qualitative vs. Quantitative	24.5	19.5	22

ANOVA RESULTS

Significant Orientation Effects:	n.s.
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s.

Class: Behavior Modification - Number 450 - N=10

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	20	23.6	_____
2. Causality vs. Free Will	19.4	25.1	_____
3. Experiential vs. Behav. Content	25.2	25	_____
4. Holism vs. Elementarism	27.4	27.3	_____
5. Biological Determinism	17.9	17.6	_____
6. Environmental Determinism	29.3	29.2	_____
7. Physicalism	21	21.4	_____
8. Qualitative vs. Quantitative	24.5	24.4	_____

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	.05
Significant Interaction Effects:	.05

Table 19 (cont.)

Class: History and Systems of Psychology - Number 470 - N=10

Dimension	Pre-Class Mean	Post-Class Mean	Mean
1. Factual vs. Theoretical	19.33	19.22	19.28
2. Causality vs. Free Will	19.33	17.89	18.61
3. Experiential vs. Behav. Content	18.44	19.89	19.17
4. Holism vs. Elementarism	24.44	23.67	24.06
5. Biological Determinism	21.44	21.55	21.50
6. Environmental Determinism	27.33	27.78	27.56
7. Physicalism	16.33	18.78	17.56
8. Qualitative vs. Quantitative	23.78	22.67	23.23

ANOVA RESULTS

Significant Orientation Effects:	.001
Significant Pre-Post Effects:	n.s.
Significant Interaction Effects:	n.s

Table 20

Means and Standard Deviations (standard errors) of the Eight Theoretical Orientation Dimensions, Pre and Post Measures, Over All 27 Courses

Theoretical Dimension	Pre		Post	
	μ	σ	μ	σ
1. Factual-Theoretical	19.67	0.97	19.74	1.16
2. Causality-Free Will	18.09	1.85	18.65	1.78
3. Experiential-Behavior	19.74	1.55	20.04	1.43
4. Holism-Elementarism	23.59	1.49	24.03	1.75
5. Biological Determinism	22.92	2.02	23.01	2.35
6. Environmental Determinism	23.09	1.04	27.42	1.01
7. Physicalism	18.29	3.64	18.93	1.14
8. Quantitative-Qualitative	23.07	0.99	23.03	1.49